Waste Reduction Office
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REGULATORY MEASURES TO ACHIEVE ONTARIO'S WASTE REDUCTION TARGETS

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AN INVITATION TO COMMENT

Interested individuals and groups are invited to comment on the proposed regulatory measures by making written submissions to the Waste Reduction Office. Waste Reduction Office staff are also available to present and discuss the proposed regulatory measures at the invitation of interested groups. Comments and invitations may be sent to:

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1.0 INTRODUCTION

1.1 Purpose

This paper describes proposed regulatory measures to help achieve Ontario's waste reduction targets. It has been prepared for the purposes of a public consultation program.

Under the authority of the *Environmental Protection Act*, the proposed regulations will have the following impacts:

- Approvals for recycling sites will be clarified and streamlined;
- Major industrial, commercial and institutional ("ICI") waste generators will be required to implement source separation (recycling) programs, waste and packaging audits and workplans; and
- Most municipalities will be required to implement source separation and leaf and yard material composting programs.

1.2 Background

Provincial waste reduction targets

The Government of Ontario has set targets of at least 25 per cent reduction in municipal waste going to disposal in 1992 and at least 50 per cent in the year 2000, using the total amount of municipal waste generated by Ontario in 1987, estimated at 10 million tonnes, as the reference base. Technical, regulatory and financial programs have been established to help achieve the waste reduction targets through implementation of the "3Rs" hierarchy of waste management - first reduction, then reuse and then recycling.

Ontario's Waste Reduction Action Plan

While enormous strides have been made to reduce the amount of waste going to disposal by all sectors of society, an accelerated effort is required if the provincial targets are to be achieved.The need to accelerate waste reduction efforts in the province was addressed by the Minister of the Environment on February 21, 1991, with the announcement of a four-part *Waste Reduction Action Plan*:

I. Implementation of strong regulatory measures to reduce at source the flow of valuable resources now going to disposal;

II. Development of the necessary financial and technical systems to direct these materials from landfills, and into productive use and reuse;

III. Help to create healthy markets for material recovered through 3Rs programs; and

IV. Establishment of public education programs that will provide all members of Ontario society with the information they need to make responsible 3Rs choices to reduce the amount of waste going to disposal.

Within these four areas, a number of specific initiatives were also announced, including the creation of a provincial Waste Reduction Office.

Waste Reduction Office

Implementation of *Ontario's Waste Reduction Action Plan* is being co-ordinated by the Waste Reduction Office, established within the Ministry of the Environment in February 1991. Working in partnership with business, labour, environmental organizations, institutions, all levels of government, and other groups interested in protecting the environment, the Waste Reduction Office is developing new and effective laws, regulations, policies and programs to promote 3Rs activities throughout Ontario.

Regulatory measures

This Initiatives Paper describes the first set of proposed regulatory measures announced as part of the *Waste Reduction Action Plan*, and subsequently developed by the Waste Reduction Office. They are intended to provide the regulatory foundation for a co-ordinated approach to achieving the province's waste reduction targets. The proposed regulatory measures will form part of *Ontario Regulation 309*, which is the general waste management regulation under the *Environmental Protection Act*.

Enabling legislation

To enable implementation of the proposed regulatory measures, amendments to the *Environmental Protection Act* will be introduced to the Legislative Assembly that would provide specific powers to the Minister of the Environment to regulate waste generators with respect to the following activities:

- Preparation of waste audits and implementation of waste reduction workplans;

- Establishment and operation of a source separation system;

- Establishment and operation of a composting system; and

- Setting standards for a municipal waste management cost accounting system.

The Waste Reduction Action Plan and the regulatory measures presented in this Initiatives Paper address municipal waste and not liquid industrial waste or hazardous waste.

2.0 APPROVALS FOR RECYCLING SITES

2.1 Intent

To facilitate the establishment of certain key types of recycling sites by clarifying and streamlining the current approvals process under the Environmental Protection Act.

2.2 Impact

Certificate of Approval

At present, a "Provisional Certificate of Approval" is required under Part V, Section 27 of the *Environmental Protection Act* to establish a waste management system or a waste disposal site. Under Section 27, a recycling site also requires a Provisional Certificate of Approval. The process for Certificates of Approval can be lengthy and thus a regulatory barrier to the 3Rs of waste management. Moreover, approvals requirements for recycling sites have not been consistently applied. This is due in part to the existing definition of recyclable materials in *Regulation 309* under the *Environmental Protection Act* and the substantial growth in the number and types of 3Rs activities that are being proposed.

Alternative approval route

The proposed regulatory changes provide a new definition of municipal recyclable material and a classification system of the types of recycling sites. They also allow the proponent of a classified recycling site the option of either applying to the Ministry of the Environment for a Certificate of Approval under Section 27 of the *Environmental Protection Act*, or the much simpler route of demonstrating compliance to a set of standards for recycling sites to the satisfaction of the Ministry.

The latter approval route is known in some jurisdictions as "permit by rule." Thus, a lengthy approvals process can be avoided, while still ensuring that the environment is protected. Use of this "alternative approval route" does not exempt a recycling site from compliance with municipal by-laws, fire department regulations, other provincial legislation, and other provisions of the *Environmental Protection Act*. Landfill sites will continue to require Certificates of Approval.

2.3 Application of the Alternative Approval Route

The alternative approval route for sites may be applied only in situations where a recycling site, listed in Section 2.5, receives source-separated materials from a waste generator.

To understand the application of the alternative approval route for recycling sites, it is important to distinguish between the different types of "classified" materials (Section 2.4) and types of recycling sites (Section 2.5).

Exemptions

Exemptions from the requirements of Part V of the *Environmental Protection Act*, and the regulation will apply in the following situations:

- Where "source-separated" materials go to an "integrated recycling site" (for example, a product manufacturer with on-site material recovery facilities) directly from a waste generator.

- Where "municipal recyclable materials" go to an end-user directly from either a recycling site or a waste generator. The definition of *recyclable materials* has been improved to remove the ambiguity in the existing definition found in *Regulation 309*.

2.4 Classified Material Types

Municipal waste

Materials discarded by individuals in the course of their daily activities at home and by commercial businesses, industries and institutions as a result of the normal operating activities, not including liquid industrial waste or hazardous waste, are referred to as *municipal waste*.

Source-separated materials

Specific types of materials that have been purposefully segregated from municipal waste into specific material types *at the point of generation* are defined as *source-separated materials*.

The following are types of source-separated materials defined under the proposed regulations:

Aluminum

All aluminum products, including beverage and food containers, foil, rigid containers such as pie plates and siding.

Brick and concrete

Uncontaminated brick and concrete rubble from construction and demolition sites.

Drywall	Manufactured or new construction drywall, including vinyl-covered drywall not contaminated by paint or other materials.
Ferrous	All iron and steel products, including food and beverage containers, iron/steel equipment, tools, parts, pipe, cable, wire, fencing, bicycle frames, auto bodies, "white goods" (such as stoves and refrigerators) and small appliances, but excluding ammunition, rifles, hand guns, hazardous materials, radioactive materials or items marked by radioactive symbols and containers of chemicals.
Fine paper	Computer print-out, white or coloured ledger grade paper, including letterhead, reports, business forms (no carbon copy forms), scratch and note pads.
Glass	Glass food and beverage containers, including bottles and jars, but excluding ceramics, window glass and light bulbs.
Newsprint	All paper products made from newsprint, including newspapers, advertising flyers and certain periodicals.
OCC	Old corrugated cardboard uncontaminated by waxes, oils, grease, glue, or plastic coatings.
PET	Polyethylene terephthalate beverage containers.
Wood	Lumber, tree trunks, tree branches and other wood wastes, except for particle board, and not contaminated by glue, paint, or preservatives or attached to non-wood material.
Municipal recyclable materials	After source-separated materials have been collected and received by a recycling site and then *prepared and transferred for utilization* in an ongoing agricultural, commercial, manufacturing or industrial process, enterprise or operation that does not involve combustion or land application of the waste they are classified as *municipal recyclable materials*. Preparation may include such activities as removal of contaminants, baling, treatment and material recovery.

2.5 Recycling Sites

A *recycling site* is generally a site which accepts some type of source-separated material for processing into municipal recyclable material.

Recycling sites are classified as follows:

Deinking recycling site

A recycling site that (a) receives source-separated newsprint or fine paper requiring deinking, (b) sorts, grades, and removes contaminated material, and (c) pulps, deinks and transfers the pulp as municipal recyclable material to an end-user.

Gypsum re ycling site

A recycling site that (a) receives source-separated drywall, (b) processes the drywall to separate the gypsum, paper, plastic or other coating, and (c) transfers the gypsum or other materials as municipal recyclable material to an end-user.

Leaf and yard material composting site

A recycling site that (a) receives source-separated leaf and yard materials, and (b) composts these materials into usable compost.

Multi-material recycling site

A recycling site that (a) receives source-separated materials limited to newsprint, fine paper, old corrugated cardboard, glass, ferrous, aluminum, PET, wood, concrete and brick, or drywall, (b) physically removes contaminants, (c) sorts, grades, bales, grinds or otherwise packages and (d) transfers the source-separated material as municipal recyclable material to an end-user.

Wood recycling site

A recycling site that (a) receives source-separated wood, (b) removes foreign material for disposal, (c) sorts, screens, grades, grinds or otherwise packages and (d) transfers the source-separated material as municipal recyclable material to an end-user.

2.6 Integrated Recycling Sites

A recycling site, as listed in Section 2.5, located at the same site where the produced municipal recyclable material is to be used for the manufacture of products is exempt from the requirements for a Certificate of Approval and the alternative approval route. An example of an integrated recycling site is a deinking site where the pulp is used to make paper.

2.7 Requirements for Recycling Sites Under the Alternative Approval Route

With the exception of integrated recycling sites, all other recycling sites must comply with the standards listed in Section 2.8.

A Certificate of Approval requirement under Section 27 of the *Environmental Protection Act* does not apply to a recycling site provided that it satisfies each of the standards as described below. Note that different standards apply to leaf and yard material composting sites (see Section 5.5).

2.8 Standards for Recycling Sites

The following items must be prepared and kept on file at the facility and made available to provincial officers upon request:

Records and Plans

- *"As constructed" drawings of the site, a vicinity map and site plan*, including services, buildings, processing units, location of on-site and access roads, loading and/or unloading areas, waste and product storage areas;

- *Operating plans*, including a description of the process(es), the equipment and technology used, types and quantities of process residues, how waste is transported onto the site, stored or otherwise managed on-site and during shipment off-site;

- *Emergency response plans* for dealing with potential fires, explosions, flooding, spills and other emergencies that can be anticipated. These plans must describe procedures, personnel responsible, emergency equipment, company and government notification and co-ordination and emergency communications systems;

- *Contingency plans* in the event of disruptions of shipments or transfer of products;

- A *decommissioning plan* for eventual closure, addressing procedures for equipment/building dismantling and demolition, site restoration and final residue disposal; and

- *Records* showing the amount and types of wastes received, sources, processing and treatment provided, final markets for recyclable

materials and final disposal sites for residues. The records must also include any process abnormalities, spills or other emergencies. They must be filed on-site for a minimum of two years.

Access

Provincial officers must also be allowed access to the site in accordance with Sections 126 and 127 of the *Environmental Protection Act*.

Public Notification

The proponent of a recycling site must notify the local municipality and adjacent property owners at the time of site proposal. The proponent must provide a minimum 60-day period for public comment starting no later than 90 days prior to the start of construction. The local municipality must notify the Ministry of the Environment, by Municipal Council resolution, at the end of the public comment period, if the Council wishes the proposal to proceed under the approvals process of Part V of the *Environmental Protection Act* leading to a Provisional Certificate of Approval.

Operation and Design

The owner and operator of a recycling site must comply with the following operation and design requirements:

- *Erecting* a chain link fence with a minimum height of 2.5 metres to control access to the site by unauthorized persons;

- *Locking* the site when the attendant is not present. Access to the property shall be by roadway closed by a gate capable of being locked;

- *Posting* signs in prominent locations showing the hours of operation, company name, contact and telephone number to call in the event of an emergency;

- *Installing and maintaining* in operating condition, outdoor lighting for emergency response, monitoring and inspection;

- *Training* staff in the operation and maintenance of the specific equipment which they operate at the site and emergency response procedures;

- *Paving* all access roads, parking areas, loading/unloading areas, and access routes for fire fighting equipment to waste and material storage and processing areas;

- *Complying with* a control program, in accordance with Section 8 of

the *Environmental Protection Act* to ensure that there are no off-site impacts from litter, noise, dust or other emissions, odour, vermin and vectors;

- *Shipping* all waste residues generated from the site to an approved waste disposal or recycling site;

- *Storing waste residue* generated from the site in a covered area or building and on an impermeable pad of concrete, asphalt or compacted clay;

- *Sorting and processing* recyclable materials in an enclosed building;

- *Storing municipal recyclable materials* inside a building or in a location otherwise screened from view by berms, fences or other screening materials;

- *Inspecting* incoming waste prior to acceptance by the site to ensure that it does not receive hazardous or liquid industrial wastes or waste not compatible with its means of waste recycling; and

Siting

The following are standards for siting a recycling site:

- Located in an area zoned "industrial";

- Not located in a floodplain area;

- All buildings and storage areas, including access roads, are at least 100 metres away from the property line of the nearest residence, school, place of worship, hospital or other public institution.

Material Receipt and Storage

No source-separated material is to be received at the site that cannot be managed or is incompatible with the processing equipment and systems or storage capabilities. The maximum amount of source-separated material to be stored on site is equivalent to 15 days of process design capacity.

Reporting

A visual inspection is to be conducted by the site operator at the start of each shift of the following areas of the recycling site:

- Loading/unloading areas;

- Processing areas;
- Storage areas;
- Security fence and property line; and
- Adjacent properties.

Ministry Notification

Using the appropriate forms, the owner or operator of a recycling site shall notify the Ministry of the Environment of the following:

- Start-up of operations, by completing and submitting Form 1, *Recycling Site Start-up Notice* (see Appendix A), to the local ministry district office within 15 days following plant start-up.

- The ownership and management structure of the company, by submitting within 60 days following plant start-up a copy of the most current *Initial Notice of Change* (Form 1, 2, or 3 of Ontario *Regulation 189*) filed under the *Corporations Information Act* or a copy of the most current *Notice of Directors or Notice of Change of Directors*, filed under the *Canada Business Corporations Act*.

- Any addition, deletion or other change to the trade style or corporate name by submitting within 14 days of any such change, a copy of the most current *Initial Notice of Change* (Form 1 or 2 of Ontario *Regulation 189*) filed under the *Corporations Information Act* or a copy of the most current *Notice of Directors or Notice of Change of Directors*, filed under the *Canada Business Corporations Act* if the company is not operating under the applicant's own name.

3.0 *ICI SECTOR* SOURCE SEPARATION, WASTE AND PACKAGING AUDITS AND WORKPLANS

3.1 Intent

To reduce the amount of waste generated by the ICI ("Industrial, Commercial, Institutional") sector, *that is, non-residential sources of waste, through the introduction of waste audits and workplans, packaging audits and workplans, and source separation programs for selected recyclable materials.*

3.2 Impact

The ICI sector is responsible for approximately 60 per cent of Ontario's municipal waste. Packaging waste accounts for about 20-30 per cent of total municipal waste, distributed equally between residential and ICI sources. Most ICI waste is collected by private waste haulers and disposed of in municipal landfill sites, though some ICI waste generators have been recycling substantial quantities of materials, particularly scrap metals, for many years. While the Blue Box program has succeeded in diverting a significant amount of residential waste, and is being expanded to include more households in more municipalities, there is, at present, no equivalent program to recycle ICI waste.

The proposed regulations for ICI waste and packaging audits, waste and packaging reduction workplans, and source separation programs will have a major impact on reducing the ICI portion of the total amount of municipal waste going to disposal in Ontario. In particular, the proposed regulations will help to encourage waste reduction actions based on proper planning rather than ad hoc initiatives and an increased integration of waste management as part of standard business management practice.

Initial implementation of the regulations will affect only the larger industrial, commercial and institutional establishments. For the purposes of applying the new regulations, the ICI sector is classified in two ways: as ICI Waste Generators (Section 3.3) and as Major Packaging Users (Section 3.5).

3.3 Classification of ICI Waste Generators

Persons owning or responsible for the following types of ICI facilities, will be responsible for completing waste audits and waste reduction workplans and establishing source separation programs:

Construction business	A business enterprise employing more than 50 persons out of one office involved in the building, renovation and repair of immobile structures, including soil excavation and landscaping.
Demolition business	A business enterprise employing more than 50 persons out of one office involved in the dismantling of any immobile structure, facility or dwelling.
Educational institution	A facility for providing accredited instruction to students, having an enrolment of more than 350 currently or in any year since 1987. This would include primary, secondary and post-secondary schools (universities, colleges and polytechnical institutes); private, separate and publicly-funding schools; and vocational, provincial, and special schools.
Foodservice establishment	An establishment which had gross sales of more than $5 million in any one fiscal year since 1987 while engaged in the preparation and/or serving of foodstuffs and/or beverages, including an establishment defined as a restaurant, cafeteria, caterer, pub, tavern, lounge, or quick service food court.
Health care facility	An institution with a capacity of more than 100 beds for the care and treatment of people, including hospitals and residential care facilities.
Hotel/Motel	An establishment offering more than 75 rooms for public accommodation.
Manufacturing business	An industrial establishment employing more than 100 persons at a single site which produces goods and commodities by physical labour or machinery.
Multi-unit residential dwelling	Any residential dwelling or structure which has more than one separate unit and is not serviced by a municipal waste collection system.

Office building

Any commercial establishment greater than 10,000 m^2 in floor area where the primary functions are the transaction of administration, business, civic or professional services.

Retail shopping complex

A group of stores, including large department stores, which are planned, developed and designed as a unit greater than 10,000 m^2 in floor area, including: strip malls, plazas, indoor shopping malls or centres, and gallerias.

3.4 Waste Audits and Waste Reduction Workplans

Definitions

Waste audit means a study of the generation and the management of waste, not including liquid industrial waste or hazardous waste.

Waste reduction workplan means an organized plan of work that when implemented will maximize waste diversion from disposal. The plan should describe specific activities, timelines, responsible parties, and expected results.

Required action

All ICI waste generators, as described in Section 3.3 shall prepare and implement waste audits and waste reduction workplans, including:

- *Examine and evaluate* waste management practices, from generation to final disposal, including opportunities for at-source reduction, waste separation, recycling efforts and marketing of recovered materials;

- *Maintain* waste audit records and a completed Form 2, *"ICI waste audit/workplan"* (see Appendix A), on site for inspection by an official of the Ministry of the Environment or of the local municipality;

- *Conduct* an annual review of previous waste audits and prepare a report which will be kept on file for inspection by an official of the Ministry of the Environment or of the local municipality;

- *Prepare* a workplan based on the most recent waste audit. The workplan and a completed Form 2 (see Appendix A) shall be kept on file for inspection by an official of the Ministry of the Environment or of the local municipality;

- *Continuously display* the workplan in the workplace so that all employees may read it; and

- *Implement* their current workplan.

Standards for Waste audits

In conducting a waste audit, persons owning or responsible for establishments within a designated class of ICI waste generator will examine and evaluate the following:

- Types and quantities of waste generated directly through operating procedures;
- Recycled content of product, packaging and materials purchased or used in production;
- Purchasing policies and specifications; and
- Administrative and maintenance procedures.

Standards for Waste Reduction Workplans

An ICI waste reduction workplan will examine and evaluate opportunities available to:

- Reduce the generation of waste through product design, packaging, purchasing policies or operating practices;
- Implement procedures and strategies for the utilization of recycled materials and the reuse or recycling of wastes generated. An ICI waste generator may implement a waste reduction program independently or in cooperation with programs implemented by other ICI waste generators; and
- Improve the appropriateness of products and packaging for reuse, recycling or disposal.

Implementation

Establishments classified as ICI waste generators (see Section 3.3), shall complete a waste audit and workplan by July 31, 1992. All other ICI waste generators shall complete a waste audit and workplan by December 31, 1993.

3.5 Classification of Major Packaging Users

Persons owning or responsible for the following types of ICI facilities, will be responsible for packaging audits and packaging waste reduction workplans (see Appendix B):

- *Food manufacturing* establishments with a Statistics Canada *Standard Industrial Classification* (SIC) number beginning with digits 10, and having 100 or more employees;

- *Beverage manufacturing* establishments with a SIC code beginning with the digits 11, and having 100 or more employees;

- *Paper or allied products manufacturing* establishments with a SIC code beginning with the digits 27, and having 100 or more employees; and

- *Chemical or chemical products manufacturing* establishments having a SIC code beginning with the digits 37, and having 100 or more employees.

These ICI sectors have been identified because they represent the majority of packaging purchases as reported by Statistics Canada.

3.6 Packaging Audits and Packaging Reduction Workplans

Definitions

Package or packaging means a material or item that is used to protect, contain or transport a commodity or product or that is physically attached to a product or its container for the purpose of marketing the product or communicating information about the product.

Packaging audit means a study which identifies and measures all the packaging materials and packaging purchased by the prescribed packaging users.

Packaging reduction workplan means an organized plan of work that when implemented will maximize packaging waste diversion from disposal. The plan should describe specific activities, timelines, responsible parties and expected results.

Required action

All major packaging users, as described in Section 3.5, are required to do the following:

- *Conduct* a packaging audit and submit a report along with a completed Form 3, *"Packaging audit/Workplan"* (see Appendix A) to the Ministry of the Environment;

- *Conduct* an annual review of their previous packaging audit and prepare and submit a report along with a completed Form 3 to the Ministry of the Environment every year;

- *Prepare* an annual packaging users workplan, based on the most recent packaging audit, and submit the annual workplan in Form 3 (see Appendix A) to the Ministry of the Environment; and

- *Implement* their current workplan.

Standards for packaging audits

In conducting a packaging audit, persons owning or responsible for establishments within a designated class of ICI waste generator will examine and evaluate the following:

- Quantity and composition of packaging, including whether it has recycled content;

- Packaging usage practices, including design, specification and selection criteria;

- Recyclability of packaging, including technical feasibility, availability of markets and extent of collection infrastructure; and

- Fate of packaging, including reuse, recycling and disposal.

Standards for packaging reduction workplans

A packaging reduction workplan shall examine and evaluate opportunities to:

- Minimize use of packaging by its direct elimination or as a result of product redesign, packaging redesign or material modification;

- Minimize consumption of packaging, through revised procurement policies or operating practices;

- Reuse packaging;

- Recycle packaging;

- Use recycled materials in packaging; and

- Minimize potential environmental impacts of packaging which does require disposal.

Implementation

Major packaging users (see Section 3.5), will be required to conduct the first packaging audit and prepare workplan and submit a report along with Form 3 (see Appendix A) to the Ministry of the Environment by July 31, 1992. The annual review of the packaging audit and workplan shall be submitted to the Ministry of the Environment by July 31 every year. *All other packaging users in the sectors described in Section 3.5, regardless of size, shall conduct a packaging audit and prepare a workplan by July 31, 1993.*

3.7 ICI Source Separation Programs

Definitions

Source separation means the purposeful segregation of materials from municipal waste into specific material types at the point of generation to facilitate recycling.

Source-separated materials refers to materials that have been purposefully segregated from municipal waste into specific material types at the point of generation.

Required action

All ICI waste generators described in section 3.3 will be required to design, implement and maintain a source separation program which shall include:

- The provision of collection, handling and storage facilities for source-separated materials;

- The necessary preparation of the materials to avoid contamination and maintain a high quality of source-separated materials;

- Measures necessary to train employees and to communicate the contents of the program to them;

- Reasonable efforts to direct source-separated materials to beneficial uses.

This requirement will be eventually extended to cover all ICI waste generators, with some exceptions (see *Implementation* below).

Designated source-separated materials

The specific types of ICI waste materials to be source-separated are specified for each of the ICI waste generators in Table 3-1.

Implementation

Compliance dates for source separation programs by major ICI waste generators will vary by geographic region as follows (ICI waste generators refer to those listed in Section 3.3):

- ICI waste generators located in the *Greater Toronto Area* (Municipality of Metropolitan Toronto and the Regional Municipalities of Durham, Halton, Peel, and York) shall implement their source separation programs by September 30, 1992;

- ICI waste generators located in the rest of *Southern Ontario* shall implement their source separation program by June 30, 1993; and

- ICI waste generators located in *Northern Ontario* (Territorial districts of Algoma, Cochrane, Kenora, Manitoulin, Nipissing, Parry Sound, Rainy River, Sudbury, Timiskaming, and Thunder Bay) shall implement their source separation program by March 31, 1994.

All other ICI waste generators in the sectors described in Section 3.3, regardless of size, shall implement their source separation programs by December 31, 1993, except for Northern Ontario, where such programs will be phased-in over a longer period.

TABLE 3-1
MATERIALS TO BE SOURCE-SEPARATED BY ICI SECTOR WASTE GENERATORS*

ICI Waste Generator	Source-Separated Materials
Construction business	OCC, wood, drywall, ferrous, concrete, brick
Demolition business	Ferrous, concrete, brick, wood
Educational institution	OCC, fine paper, newsprint, aluminum, ferrous, glass
Foodservice establishment	OCC, fine paper, newsprint, aluminum, ferrous, glass
Health care facility	OCC, fine paper, newsprint, aluminum, ferrous, glass
Hotel/Motel	OCC, fine paper, newsprint, aluminum, ferrous, glass
Manufacturing business	OCC, fine paper, newsprint, aluminum, ferrous, glass, wood
Multi-unit residential dwelling	OCC, fine paper, newsprint, aluminum, ferrous, glass
Office building	OCC, fine paper, newsprint, aluminum, ferrous, glass
Retail shopping complex	OCC, fine paper, newsprint, aluminum, ferrous, glass

* For a complete schedule of compliance dates see Section 3.7, *Implementation*.

4.0 MUNICIPAL SOURCE SEPARATION PROGRAMS

4.1 Intent

To ensure that a source separation program for selected recyclable materials is available in all but the smallest Ontario municipalities.

4.2 Impact

If expanded across the province, source separation programs (typically by Blue Box curbside recycling) for selected recyclable materials has the potential of diverting up to 14 per cent of the residential waste stream or 5.6 per cent of the total municipal waste stream. Under the proposed regulatory requirements, up to 93 per cent of Ontario households would be serviced by recycling programs. (As of June 1991, approximately 55 per cent of Ontario households were serviced by source separation programs).

4.3 Definitions

Source separation

The purposeful segregation of materials from municipal waste into specific material types at the point of generation to facilitate recycling.

Source separated materials

Materials that have been purposefully segregated from municipal waste into specific material types at the point of generation.

Curbside collection system

A waste management system involving the collection of municipal waste, generated by a household or other source, at the household or the premises of the sources, and the transportation of such waste to a waste disposal site.

Depot collection system

A waste management system involving the collection of municipal waste generated by a household or other source, at a local depot, and the transportation of such waste to a waste disposal site.

Population

The number of permanent residents within a given municipality as determined by the most recent municipal enumeration.

4.4 Required Action

All Ontario municipalities of 5,000 or more in population, including incorporated cities, towns, villages, townships, area municipalities and separated towns will be required to establish and maintain source separation programs, which shall include:

- The provision of collection, handling and storage facilities for source separated materials, and where collection services shall match those for refuse collection;

- The provision of any necessary preparation of the source-separated materials and requirements respecting quality and avoidance of contamination;

- The provision of appropriate storage containers to any householders residing in a dwelling serviced by municipally-operated curbside or depot refuse collection;

- Measures necessary to communicate the contents of the program to residents and ensure proper implementation by employees;

- Reasonable efforts to direct separated materials to beneficial uses; and

- Preparation and submission to the Ministry of the Environment an annual report (Form 4, Appendix A) on the amount of municipal waste diverted from disposal through source separation and recycling.

Designated source-separated materials

Materials to be collected by municipal source separation programs include newsprint, and food and beverage containers made of steel, aluminum, glass or PET. (This does not preclude additional materials being collected by municipal source separation programs.) The types of designated source-separated materials will be expanded as infrastructure and financial issues are addressed. It is anticipated that municipal source separation programs will include organics and mixed plastics within the next several years.

4.5 Implementation

Municipalities classified for the purposes of source separation will be required to implement source separation programs by July 31, 1992.

5.0 MUNICIPAL LEAF AND YARD MATERIAL COMPOSTING

5.1 Intent

To ensure that community composting facilities for leaf and yard material are available in all Ontario communities where leaf and yard material is collected separately from municipal waste.

5.2 Impact

Organic waste makes up approximately 30 per cent of the total municipal waste going to municipal landfill. Of this quantity, leaf and yard waste makes up a significant proportion. Many municipalities in Ontario have established leaf and yard collection and community composting programs. These programs are relatively easy to establish and operate. The proposed regulations will help to make the programs more universally available across Ontario. As well, they will facilitate approvals for leaf and yard material composting sites. The sites will not require a Certificate of Approval under Section 27 of the *Environmental Protection Act* provided that certain design and operating standards are maintained to the satisfaction of the Ministry of the Environment. This is an alternative approval route as is proposed for other recycling sites (see Section 2.2).

5.3 Definitions

Composting — The treatment of material by aerobic decomposition of organic matter by bacterial action for the production of stabilized humus.

Leaf and yard material — Leaves, grass clippings, tree and shrub trimmings, and plant material other than lumber.

Leaf and yard material composting site — A recycling site that receives source separated leaf and yard material and that composts these materials into useable compost.

Alternative methods of leaf and yard composting include:

Aerated static pile — A windrow composting method in which aeration is accomplished either by forcing or drawing air through the composting mass by way of ducts generally installed at the based of the pile.

In-vessel — A method of composting in which the compost is mechanically mixed and aerated in a container or enclosed building.

Windrow — An elongated pile of material undergoing composting.

5.4 Required Action

All municipalities shall provide a leaf and yard material composting system for all residential sources serviced by a municipally-operated leaf and yard material collection system which was in place as of January 1, 1991. A leaf and yard composting system shall include at least the following elements:

- The acceptance of leaf and yard material and the provision of appropriate leaf and yard material receiving containers at local depots and landfill sites where persons may bring municipal waste;
- Curbside collection of leaf and yard material in municipalities providing curbside refuse collection service;
- Depot collection of leaf and yard material in municipalities providing depot refuse collection service;
- Transportation of leaf and yard material to a leaf and yard composting site and composting the material at the site;
- Reasonable efforts to direct compost to beneficial uses;
- Ongoing communications with all participants in the leaf and yard composting system to ensure effective source separation of leaf and yard material; and
- Preparation and submission to the Ministry of the Environment an annual report (Form 4, see Appendix A) on the amount of leaf and yard material diverted from disposal through composting.

5.5 Standards for Leaf and Yard Material Composting Sites

A municipal leaf and yard material composting site will be deemed to have a "Certificate of Approval" under Section 27, *Environmental Protection Act*, if it satisfies the following standards:

Siting

A distance of at least 100 metres is maintained from the edge of all waste storage and processing areas to a water well or watercourse.

Operation and design

The owner and operator of a leaf and yard composting site must comply with the following operation and design requirements:

- The composting process is turned windrow, aerated static piles or in-vessel;
- Windrow and aerated static piles are constructed as elongated piles of approximately triangular cross-section. The height is no less than 2 metres and the base is no less than 3.0 metres;
- Temperature of the windrow and aerated static piles are maintained at least 55° C for at least 15 days. For in-vessel systems, 55° C must be maintained for at least three days. Temperature is measured at points one metre inside the pile;
- Windrow is turned at least five times at regular intervals after achieving 55° C.
- A temperature of at least 55° C is achieved after the fifth turning;
- During processing, moisture content of a windrow is maintained in the 45 to 60 per cent range;
- Composting systems have adequate natural or forced ventilation to ensure proper aeration to maintain aerobic conditions;
- A minimum curing period (measured from 30 days after first obtaining a temperature of 55° C in the piles) of six months is provided for compost. The piles are turned at least once a month during the six month timespan;

Sampling and analysis

Compost and raw feed material must be sampled and analyzed in accordance with Ministry of the Environment guidelines. All samples

are to be analyzed for the parameters listed in Table 6-1.

Compost application

Compost application must comply with the criteria set out in Section 6.4, *Controlled Compost Use*.

Material receipt and storage

No more than an equivalent of three days amount of feed material *received* is to be stored on site, excluding bulking agents or other additives. Likewise, no more than an equivalent amount of 18 months of finished compost is to be stored on site, including compost in the curing stage.

Exceptions to general standards for recycling sites

The following general standards for recycling sites (see Section 2.8) do not apply or are modified for leaf and yard material composting sites:

- Outdoor lighting is not mandatory;
- Access roads may be either gravel or paved;
- Plans and records may be filed either at the composting site or at the owner or operator's local offices. If these are at a location other than the processing site, then the address where the records may be found should be indicated on a sign leading into the site;
- Buildings are not required either for receiving and processing leaf and yard material or for curing and storing compost; and
- Siting may be in other areas than zoned industrial.

All other general standards for recycling sites apply to leaf and yard material composting sites.

5.6 Implementation

Municipal leaf and yard material composting systems must be operational by July 31, 1992, for the municipalities specified in Section 5.4.

6.0 CONTROLLED COMPOST

6.1 Intent

- *To ensure that composting projects and compost use are managed with due regard to process conditions and chemical and physical characteristics, to prevent contamination of the environment.*

- *To ensure that composting is allowed to develop as a significant waste management tool that will contribute to Ontario's waste reduction targets.*

- *To ensure that the approval of systems for the production, handling and use of compost, is managed in a consistent manner throughout Ontario.*

6.2 Background

The output from a composting process depends upon the input quality as well as the operating conditions. The output quality, in turn, determines whether the composted material must be managed either as a *product* or as a *waste*.

The information is this section should be used in conjunction with the more detailed information on compost quality described in the Ministry of the Environment's *Interim Guidelines for the Production and Use of Aerobic Compost* to be available in fall 1991. (A draft of the interim guidelines document was released for public comment in May 1991.)

The heavy metal criteria, set out in both Table 6-1 of this document, and in the interim compost guidelines are taken from the Ministry's *"Upper Limit of Normal" Contaminant Guidelines for Phytotoxicology Samples*. This information on typical background levels in Ontario soils is currently being updated by the Ministry. The Ministry is also currently evaluating allowable metal criteria for other materials such as inert fill. Based on this evaluation, the interim compost guidelines may require revision. *Hence, both the interim compost guidelines and Table 6-1 should be regarded as interim at this time.*

The other compost quality criteria, such as organic chemicals, non-biodegradable particulate matter, and stability are also subject to change as additional information becomes available.

6.3 Definitions

Composting — The treatment of material by aerobic composition of organic matter by bacterial action for the production of stabilized humus.

Compost product — Stabilized humus-like material resulting from the composting process which (1) has metal concentrations equal to or less than the values of *Column A* of Table 6-1, (2) has organic chemical concentrations equal to or less than the values of *Column A* of Table 6-1; and (3) satisfies the non-biodegradable material requirements as listed in Table 6-1. If no determination of stability is made, the compost product must have been cured for at least a six-month period.

Controlled compost — Stabilized humus-like material resulting from the composting process which (1) has metal concentrations equal to or less than the values of *Column B* of Table 6-1, (2) has organic chemical concentrations equal to or less than the values of *Column B* of Table 6-1; and (3) satisfies the non-biodegradable material requirements as listed in Table 6-1. If no determination of stability is made, the controlled compost must have been cured for at least a six-month period.

Urban soils — Soils within a geographic area serviced with communal water and sewage systems.

6.4 Compost Use Options

There are two possible categories for compost and its use, based on the concentration levels of heavy metals:

- *Compost product* - can be used on an unrestricted basis.
- *Controlled compost* - can only be used as per the conditions described below:

Conditions for use of controlled compost

- Controlled compost may be used only on urban soils;
- The compost producer must maintain records of all sites where controlled compost is applied;
- Where controlled compost is applied to a site more than once in a five-year period, the compost producer may not allow any

further application without monitoring the concentration of metals in the soil;

- Controlled compost may not be applied to a site where such application could result in soil metal concentrations exceeding those listed in Column C of Table 6-1; and

- Compost producers must maintain records of controlled compost application sites for a minimum of ten years. Such records must be available for inspection by an official of the Ministry of the Environment on reasonable notice.

TABLE 6-1
ANALYTICAL PARAMETERS FOR MUNICIPAL COMPOST

Parameter	Concentration (ppm, dry weight basis)		
	Column A	Column B	Column C Maximum Allowable Metal Concentrations in Soil
Metals			
Arsenic	10	20	14
Cadmium	3	4	1.6
Chromium	50	50	120
Cobalt	25	25	20
Copper	60	100	100
Lead	150	500	60
Mercury	0.15	0.5	0.5
Molybdenum	2	3	4
Nickel	60	60	32
Selenium	2	2	1.6
Zinc	500	500	220
Organic Chemicals			
PCB	0.5	0.5	-

Non-biodegradable Material

Plastic - 1% dry weight basis (oversize - 8 mesh)
Other - 2% dry weight basis (oversize - 8 mesh)

Source: Values in Column A and Column B - *"Upper Limit of Normal" Contaminant Guidelines for Phytotoxicology Samples* Ontario Ministry of the Environment, March 1989; Values in Column C - *Guidelines for Sewage Sludge Utilization on Agricultural Lands* Ministry of Agriculture and Food, Ministry of the Environment, and Ministry of Health, January 1986 (revised).

APPENDIX A

DRAFT FORMS

APPENDIX A
DRAFT FORMS

FORM 1
RECYCLING SITE START-UP NOTICE

THE FOLLOWING INFORMATION WILL BE REQUIRED:

1. NAME OF OWNER/OPERATOR

2. MAILING ADDRESS
   - Street address
   - City
   - Postal Code

3. TELEPHONE - (999) (999 - 9999)

4. SITE LOCATION
   - Street Address
   - City
   - Postal Code

5. TELEPHONE - (999) (999 - 9999)

6. TYPE OF SITE
   - Multi-material recycling
   - Leaf and yard material composting
   - Gypsum recycling
   - Wood recycling
   - Deinking recycling

7. TYPES OF SOURCE SEPARATED MATERIALS TO BE RECEIVED

8. QUANTITY OF SOURCE SEPARATED MATERIALS TO BE RECEIVED (Tonnes/month)

9. TYPE OF RECYCLABLES TO BE PRODUCED

10. QUANTITY OF RECYCLABLES TO BE PRODUCED(Tonnes/month)

11. START-UP DATE

12. CONTACT IN THE EVENT OF AN EMERGENCY
    -Name
    -Telephone

13. CERTIFICATION OF COMPLIANCE WITH REGULATION XXX

14. SIGNATURE

15. TITLE

16. DATE SIGNED

APPENDIX A
DRAFT FORMS

FORM 2
ICI WASTE AUDIT / WORKPLAN REPORT

THE FOLLOWING INFORMATION WILL BE REQUIRED:

1. BUSINESS NAME

2. NAME OF CHIEF EXECUTIVE OFFICER

3. BUSINESS ADDRESS
   - Street address
   - City
   - Postal Code
   - Telephone/ Fax

4. PERSON COMPLETING THIS REPORT
   - Name
   - Title
   - Address
   - Telephone/Fax

5. COMPANY INFORMATION
   - Type of product or service
   - Standard Industrial Classification (SIC) Code
   - Number of employees at this location

6. WASTE GENERATED FROM ALL SOURCES:

Waste Type	Type of Operation	Weight Generated (Tonnes)		Weight Reused (Tonnes)		Weight Recycled (Tonnes)		Weight Disposed (Tonnes)	
		1987	1991	1987	1991	1987	1991	1987	1991
Total		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]

7. NET DISPOSAL FOR 1987 = [A]-[C]-[E] = [G]

8. NET DISPOSAL FOR 1991 = [B]-[D]-[F] = [H]

9. DETAILS OF INCREASE OR DECREASE IN PRODUCTION OR SIZE OF ESTABLISHMENT.

10. WASTE DIVERSION ACTIONS:

11. WASTE AVOIDED BY REDUCTION EFFORTS:

Material	Weight (Tonnes)	Action Taken	Weight Avoided (Tonnes)	Date Implemented
Total			[I]	

12. WASTE DIVERTED BY REUSE:

Material	Weight (Tonnes)	Action Taken	Weight Diverted (Tonnes)	Date Implemented
Total			[J]	

13. WASTE DIVERTED BY RECYCLING:

Material	Weight (Tonnes)	Action Taken	Weight Diverted (Tonnes	Date Implemented
Total			[K]	

14. ADDITIONAL MEASURES TO IMPROVE WASTE MANAGEMENT:
(such as revising procurement policies, improved product durability)

Action Taken	Estimated Diversion (Tonnes)
Total	[L]

15. TOTAL WASTE DIVERSION = [I] + [J] + [K] + [L] = [M]

16. ESTIMATED NET WASTE FOR DISPOSAL IN 1992 = [H]-[M] = [N]

17. ESTIMATED WASTE DIVERSION BY 1992 = ([G] - [N])÷[G] X 100 = [O] %

18. CERTIFICATION OF COMPLIANCE WITH REGULATION XXX

19. SIGNATURE

20. TITLE

21. DATE SIGNED

APPENDIX A
DRAFT FORMS

FORM 3
PACKAGING AUDIT / WORKPLAN REPORT

THE FOLLOWING INFORMATION WILL BE REQUIRED:

1. BUSINESS NAME

2. NAME OF CHIEF EXECUTIVE OFFICER

3. BUSINESS ADDRESS
   - Street address
   - City
   - Postal Code
   - Telephone/ Fax

4. PERSON COMPLETING THIS REPORT
   - Name
   - Title
   - Address
   - Telephone/Fax

5. COMPANY INFORMATION
   - Type of product or service
   - Standard Industrial Classification (SIC) Code
   - Number of employees at this location

6. PACKAGES AND PACKAGING MATERIALS PURCHASED:

Type of Packaging Material	Weight of Material (Tonnes)		*Weight of Recycled Content (Tonnes)		Net Weight (Tonnes)	
	1988	1991	1988	1991	1988	1991
Total	[A]	[B]	[C]	[D]	[E]	[F]

* If recycled content is not from packaging materials divide weight by 10.

7. GROSS WEIGHT OF PACKAGING PURCHASED DURING 1988 = [A]

8. GROSS WEIGHT OF PACKAGING PURCHASED DURING 1991 = [B]

9. WEIGHT OF RECYCLED CONTENT DURING 1988 = [C]

10. WEIGHT OF RECYCLED CONTENT DURING 1991 = [D]

11. NET WEIGHT OF PACKAGING PURCHASED DURING 1988 = [A] - [C] = [E]

12. NET WEIGHT OF PACKAGING PURCHASED DURING 1991 = [B] - [D] = [F]

APPENDIX A
DRAFT FORMS

FORM 3 (continued)
PACKAGING AUDIT / WORKPLAN REPORT

13. WASTE DIVERSION ACTIONS:

14. WASTE AVOIDED BY REDUCTION EFFORTS:

Packaging Material	Weight (Tonnes)	Action Taken	Weight Avoided (Tonnes)	Date Implemented
Total			[G]	

15. WASTE DIVERTED BY REUSE OF PACKAGING(IN-PLANT OR BY THE CONSUMER):

Packaging Material	Weight (Tonnes)	Action Taken	Weight Diverted (Tonnes)	Date Implemented
Total			[H]	

16. PACKAGING WASTE DIVERTED BY USING RECYCLED CONTENT OR RECYCLING PACKAGING WASTE FROM THE PLANT:

Material	Weight (Tonnes)	Action Taken	*Weight Diverted (Tonnes	Date Implemented
Total			[I]	

* Divide this number by 10 if counting recycled content that is not packaging.

17. ADDITIONAL MEASURES TO IMPROVE WASTE MANAGEMENT:
(such as product redesign, establishment of return systems)

Action Taken	Estimated Diversion (Tonnes)
Total	[J]

18. TOTAL ESTIMATED PACKAGING WASTE DIVERSION = [G] + [H] + [I] + [J] = [K]

19. ESTIMATED NET PACKAGING FOR 1992 = [F] - [K] = [L]

20. WASTE DIVERSION COMPARED TO 1988 = ([E] - [L])÷[E] X 100 = [M]%
21. CERTIFICATION OF COMPLIANCE WITH REGULATION XXX
22. SIGNATURE
23. TITLE
24. DATE SIGNED

APPENDIX A
DRAFT FORMS

FORM 4

MUNICIPAL WASTE DIVERSION REPORT

THE FOLLOWING INFORMATION WILL BE REQUIRED:

1. REPORTING PERIOD(YEAR)
2. MUNICIPALITY NAME
3. POPULATION
4. WASTE QUANTITY DISPOSED(TONNES/YEAR)=[Q]
5. LEAF AND YARD MATERIAL COMPOSTED(TONNES/YEAR)=[A]
6. OTHER ORGANIC MATERIAL COMPOSTED(TONNES/YEAR)=[B]
7. TOTAL MATERIAL COMPOSTED=[A]+[B]=[C]
8. NEWSPRINT RECYCLED(TONNES/YEAR)=[D]
9. GLASS RECYCLED(TONNES/YEAR)=[E]
10. STEEL RECYCLED(TONNES/YEAR)=[F]
11. ALUMINUM RECYCLED(TONNES/YEAR)=[G]
12. PET RECYCLED(TONNES/YEAR)=[H]
13. OTHER MATERIALS RECYCLED(TONNES/YEAR)=[I]
14. TOTAL MATERIALS RECYCLED=[D]+[E]+[F]+[G]+[H]+[I]=[J]
15. TOTAL WASTE QUANTITY DIVERTED=[C]+[J]=[K]
16. TOTAL WASTE QUANTITY GENERATED=[Q]+[K]=[L]
17. WASTE DIVERSION RATE[K] ÷ [L] X 100 = [M] %
18. CERTIFICATION OF COMPLIANCE WITH REGULATION XXX
19. SIGNATURE
20. TITLE
21. DATE SIGNED

APPENDIX B
DESCRIPTION OF MAJOR PACKAGING USERS

Standard Industrial Classification (SIC) Number	Industry Group
	Major Group 10 - Food Industries
101	Meat and Poultry Products Industries
1011	Meat and meat products industry (except poultry)
1012	Poultry products industry
102	Fish Products Industry
1021	Fish products industry
103	Fruit and Vegetable Industries
1031	Canned and preserved fruit and vegetable industry
1032	Frozen fruit and vegetable industry
104	Dairy Products Industries
1041	Fluid milk industry
1042	Other dairy products industries
105	Flour, Prepared Cereal Food and Feed Industries
1051	Cereal grain flour industry
1052	Prepared flour mixes and prepared cereal food industry
1053	Feed industry
106	Vegetable Oil Mills (Except Corn Oil)
1061	Vegetable oil mills (except corn oil)
107	Bakery Products Industries
1071	Biscuit industries
1072	Bread and other bakery products industry
108	Sugar and Sugar Confectionary Industries
1081	Cane and beet sugar industry
1082	Chewing gum industry
1083	Sugar and chocolate confectionary industry
109	Other Food Products Industries
1091	Tea and coffee industry
1092	Dry pasta products industry

	1093	Potato chip, pretzel and popcorn industry
		Major Group 11 - Beverage Industries
111		Soft Drink Industry
	1111	Soft drink industry
112		Distillery Products Industry
	1112	Distillery products industry
113		Brewery Products Industry
	1113	Brewery products industry
114		Wine Industry
	1114	Wine industry
		Major Group 27 - Paper and Allied Product Industries
271		Pulp and Paper Industries
	2711	Pulp industry
	2712	Newsprint industry
	2713	Paperboard industry
	2714	Building board industry
	2719	Other paper industries
272		Asphalt Roofing Industry
	2721	Asphalt roofing industry
273		Paper Box and Bag Industries
	2731	Folding carton and set-up box industry
	2732	Corrugated box industry
	2733	Paper bag industry
279		Other Converted Paper Products Industries
	2791	Coated and treated paper industry
	2792	Stationery paper products industry
	2793	Paper consumer industry
	2799	Other converted paper products industries not elsewhere classified

Major Group 37 - Chemical and Chemical Products Industries

371		Industrial Chemicals Industries not elsewhere classified
	3711	Industrial inorganic chemical industries not elsewhere classified
	3712	Industrial organic chemical industries not elsewhere classified
372		Agricultural Chemical Industries
	3721	Chemical fertilizer and fertilizer materials industry
	3722	Mixed fertilizer industry
	3729	Other agricultural chemical industries
373		Plastic and Synthetic Resin Industry
	3731	Plastic and synthetic resin industry
374		Pharmaceutical and Medicine Industry
	3741	Pharmaceutical and medicine industry
375		Paint and Varnish Industry
	3751	Paint and varnish industry
376		Soap and Cleaning Compounds Industry
	3761	Soap and cleaning compounds industry
377		Toilet Preparations Industry
	3771	Toilet preparations industry
379		Other Chemical Products Industries
	3791	Printing ink industry
	3792	Adhesives industry
	3799	Other chemical products industries not elsewhere classified